

Issues That Affect the Competitiveness of America's Mining Industry

Testimony to the House Resources Sub-Committee on Energy and Mineral Resources Oversight Hearing

"Improving the Competitiveness of America's Mining Industry"

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Chairman Gibbons and distinguished members of Congress:

Thank you for the opportunity to testify before this Subcommittee today. My name is Ann Carpenter. I work as a professional exploration geologist in the domestic and international mineral development arena, and am an advisor to and past president of the Women's Mining Coalition (WMC). WMC has members and participants nation-wide addressing mineral development issues important to the nation – its economy and its national security. Today I will discuss "Improving the Competitiveness of America's Mining Industry".

I have a bachelor's degree in Geology from Montana State University in Bozeman, Montana (1980), with additional advanced degree studies completed at Mackay School of Mines, UNR (1981-1983). I have over 24 years of experience as a mineral development professional, exploring for and developing mineral resources worldwide. This experience has provided me opportunities to work in many diverse geologic and cultural settings – in the United States, Chile, Argentina, Peru, Mexico, and East Africa. I have worked for junior, mid-tier, and major mining companies, as well as for local governments and institutions evaluating mineral resources – integrating sustainable development principles and practices from the grassroots exploration phase through property reclamation and mine closure. I am a member in several

professional societies and organizations and trade associations, including: SME, MEMS, GSN, NWMA, NvMA, and NMA (through the Women's Mining Coalition).

Competition – Increasing Pressures from a Hungry World

In my capacity as an exploration geologist doing mineral development work both in the U.S. and overseas, I have been tracking with interest the influence of China and its population and the resulting increased competition for mineral resources (fuel and non-fuel) globally. Because of this one country's growing consumption and appetite, the United States is no longer first in line for global mineral resources that we need in our daily lives. As China continues to emerge as a growing global economy, it is time to shift gears here in the United States, away from complacency to renewed competitiveness.

China's Influence

Included in this document is information that represents data of the United States Geological Survey (*Mineral Commodity Summaries*, 2005), illustrating foreign reliance for minerals we consume to maintain our standard of living (Appendix A). According to this commodity summary, the United States is greater than 50% dependent on foreign sources for 42 minerals, of which we rely 100% on foreign supplies for 17 minerals. Last year, the U.S. was dependent on 50% or greater of its supplies for 39 minerals from foreign sources (USGS, *Mineral Commodity Summaries*, 2004), illustrating an increase of 7% in just one year.

There are a total of 36 minerals for which we are reliant for 100-68% of our supplies from foreign sources, and for nearly half of these (16) China is one of the major suppliers (USGS, *Mineral Commodity Summaries*, 2005). As China continues to evolve and emerge into the global economy, its consumption rates for mineral resources are ever-increasing. This is creating a much more competitive market for global mineral resources, and China is aggressively pursuing these resources to meet its demands. As a result, these mineral resources are no longer readily available to the U.S. or other nations around the world, and are now being secured by China. All of this is resulting in greater demand for mineral supplies, higher costs for mineral resources globally, and the U.S. and its consumers are beginning to feel the pinch.

While tracking China's recent activities, it is notable that the Chinese are actively attempting to buy companies with multi-metal production. They have secured copper production in Chile for the next five years and they are buying up mines in other countries (Zambia, to name one) and part ownership in mines, such as the Iron mine they invested in Minnesota. Noranda, a base metal Canadian mining company, merged with Falconbridge mining company (<http://www2.cdnnews.com/scripts/DNRP/scroll.asp?t=noranda>) in order to quell China's efforts to purchase the company. China is not only using their state owned corporations to buy or invest in privately owned mining companies in order to secure guaranteed supplies of metals, they are also actively looking at decreasing or eliminating exports of mineral production from their own mines. Media reports last summer indicated that the Chinese were beginning to curtail production and export of Fluorspar and Tungsten, two minerals for which the US is 100% and 73% (respectively) reliant, and China is a major supplier to the US for these two commodities. The response in the market was an increase in the price of both of these minerals.

The summaries below are of three minerals, Fluorspar, Barite and Tungsten. These are minerals that we are 100%, 79%, and 73% reliant on foreign sources, respectively. These summaries include general overviews of how these minerals are used and where some of the known reserve/ resource areas can be found. In all three cases, China is a significant supplier of these minerals.

Fluorite (fluorspar): (from the MII website (<http://www.mii.org/Minerals/photofluor.html>)
“Used in production of hydrofluoric acid, which is used in the electroplating, stainless steel, refrigerant, and plastics industries, in production of aluminum fluoride, which is used in aluminum smelting, as a flux in ceramics and glass, in steel furnaces, and in emery wheels, optics, and welding rods. The United States once produced large quantities of mineral fluorspar. However, the great fluorspar mines of the Illinois-Kentucky fluorite district are now closed. Today, the United States imports fluorspar from China, South Africa, Mexico, and other countries ... A small percentage of the fluorspar consumed in the United States is derived as a by-product of industrial processes. For instance, an estimated 5,000 to 8,000 tons of synthetic fluorspar is produced each year in the uranium enrichment process, the refining of petroleum, and in treating stainless steel. Hydrofluoric acid (HF) and other fluorides are recovered during the production of aluminum.”

The United States is 100% reliant on foreign sources for Fluorite – China, South Africa and Mexico are major foreign sources (USGS, *Mineral Commodity Summaries*, 2005).

Barite (Barium): (from the MII website (<http://www.mii.org/Minerals/photobarium.html>)
“Used as a heavy additive in oil-well-drilling mud, in the paper and rubber industries, as a filler or extender in cloth, ink, and plastics products, in radiography (“barium milkshake”), as getter (scavenger) alloys in vacuum tubes, deoxidizer for copper, lubricant for anode rotors in X-ray tubes, spark-plug alloys. Also used to make an expensive white pigment ... There are nine barite mines in the United States; in Nevada, Georgia, Tennessee, and Missouri. China produces nearly ten times as much barite as the U.S., and India also produces more. About 40 other countries are also producers ... Many barite deposits are known worldwide, but some are uneconomic because barite can be mined more cheaply in China.”

The United States is 79% reliant on foreign sources for Barite – China and India are major suppliers (USGS, *Mineral Commodity Summaries*, 2005).

Tungsten: from the MII website (<http://www.mii.org/Minerals/phototung.html>)
“Used in metalworking, construction and electrical machinery and equipment, in transportation equipment, as filament in lightbulbs, as a carbide in drilling equipment, in heat and radiation shielding, textile dyes, enamels, paints, and for coloring glass. Major producers are China, Korea, and Russia. Large reserves are also found in the U.S., Bolivia, and Canada ... Tungsten is retrieved from the ore minerals scheelite (CaWO₄, calcium tungstate) and wolframite ((Fe,Mn)WO₄, iron-manganese tungstate). Of the world’s tungsten reserves, over 90% are outside the United States. Of these resources, nearly half are found in China, and Canada and

Russia also have large reserves. About one-third of the U.S. imports of tungsten are from China, Russia provides about 25%, and a variety of other nations provide the rest. A significant amount of tungsten is recovered through recycling of scrap tungsten products. Recycled tungsten in the US accounts for nearly one-third of the tungsten consumed.”

The United States is 73% reliant on foreign sources for Tungsten – China and Canada are major suppliers (USGS, *Mineral Commodity Summaries*, 2005).

China has placed itself competitively in the global market for minerals, and is being very aggressive in acquiring the mineral resources it needs to advance its society. They, along with India and other emerging nations, are building their economies using the same mineral resources that we used to build and maintain our economy (Appendix D; listing of some important minerals and their uses). At the level and intensity that China alone is now playing in the global market, we need to review our own tactics and strategies and find a renewed competitiveness in order to meet our country’s needs.

Issues to Address Here at Home – Impediments to Competitiveness

U.S. and Its Mining Industry

Even though the industry is in the midst of an upswing, with metals prices at some of the highest they have been in 5 years, we are still only capturing about 7-10% of the worldwide exploration dollars (Fraser Institute, 2005). The US used to capture in the range of 20% of worldwide exploration budgets in the early 1990s, and for some companies I was working for in the mid-1980s it was as high as 50% of worldwide budgets. While the United States has witnessed this decline, other regions of the world (e.g., Canada, Australia, South America, and increasingly in China) have experienced increases in exploration spending and development of new mines.

At one time, America was a major producer of mineral commodities, both for its domestic economy and the world at large. This production served as a primary source of industrial growth and led to the high U.S. consumer living standards that are now the envy of the world. More recently, the United States has become increasingly dependent on foreign imports to compensate for its dwindling mineral production. Production is dwindling not always due to lack of mineral potential; we are instead losing investment in mineral development in the U.S. to overseas markets, in response to increasing impediments to exploration and development of our mineral wealth in the U.S. What are some of the impediments to mineral development? How can we address these and increase our competitiveness in the global market place?

Increasing Competitiveness

The United States needs to address a number of issues, in order to increase our competitiveness in the global minerals market. I will address several areas of concern, including: regulatory updates and improvements to ESA and NEPA; the need for a National Minerals Policy; and funding of the USGS. The other women on this panel will be addressing other issues of equal concern, with one focusing more detailed attention on NEPA. All of the concerns to be addressed are critical to helping the U.S. move away from complacency and into a more competitive role in mineral resource development.

REGULATORY IMPROVEMENTS – ENDANGERED SPECIES ACT

Our nation needs regulatory updates and improvements to the Endangered Species Act (ESA). ESA is more than thirty (30) years old, and during this time there have been more than 1,300 species that have been listed as threatened and endangered, yet less than 1% of the listed species have been recovered. WMC supports updating and improving the ESA to provide new tools and faster ways to make improvements in order to better achieve **recovery** on the ground, including:

- Establish Recovery Objectives: Establishing recovery objectives will give us a goal to work toward. When that goal is reached, species can be removed from the list.
- Encourage Voluntary Conservation Efforts: Voluntary conservation efforts should be promoted by creating new avenues for private property owners to proactively participate in species recovery efforts.
- Increase State and Local Involvement in Species Recovery Efforts: We need to take advantage of State and local expertise, abilities and on-the-ground knowledge by providing more flexibility so that States can facilitate voluntary efforts to protect and enhance species.
- Increase Funding for Voluntary Programs: We need to financially support the voluntary programs and State or locally led initiatives that are critical to ensuring species recovery.
- Encourage Prelisting Measures: We need to promote efforts like the collaborative efforts by States, local governments and private parties to develop sage grouse protection programs to address species of concern before they have to be listed under the ESA.
- Strengthen the Critical Habitat Designation Process: We need to strengthen the critical habitat designation process by ensuring that critical habitat designations are supported by sound decision-making procedures, taking into account existing habitat protection measures (local, state and federal) and promoting timely field data surveys.

The public and the nation deserve timely decisions on important ESA matters, and any reform or modernization of the law should create incentives for federal agencies to issue timely decisions to ensure fairness to all parties.

REGULATORY IMPROVEMENTS – NATIONAL ENVIRONMENTAL POLICY ACT

Federal actions requiring NEPA approval frequently involve U.S. mineral and coal mining operations. Those of us working in these sectors of the mining industry have experience with the way the law is implemented, raising concerns that environmental impact analysis often add needless costs without providing adequate environmental benefits. NGOs often use NEPA merely as a tool to block rather than assess proposed actions. This has a “chilling impact” on efforts to maximize coal and mineral production in the U.S., both of which promote economic growth and national security nationwide. Recent House activity regarding NEPA review is

encouraging, and WMC supports these, including:

- The recently launched bipartisan Task Force on Improving the National Environmental Policy Act (NEPA) established by the House Resources Committee.
 - The Task Force will hold a number of field hearings across the country to hear testimony on a range of issues directly from the affected parties. After these events, the Task Force will make recommendations on ways to improve NEPA, with a goal to ensure that federal decisions are made in an appropriate, environmentally sound manner, rather than being focused on litigation.
- Legislation that avoids costly litigation and make public participation in environmental decision-making more efficient, without any reduction in environmental protection.

OUR NATION NEEDS A NATIONAL MINERALS POLICY

A reliable domestic supply of minerals is essential to the nation's economic growth, security, and quality of life. Our nation needs a National Minerals Policy that fosters a healthier regulatory climate for U.S. mining and the investments necessary to find and produce the mineral products that are the foundation of our economy. A healthier regulatory climate is one that is fair, predictable and efficient.

We need policies that recognize the importance of rational natural resource development, economic progress and environmental protection. A National Minerals Policy would provide the regulatory certainty necessary to foster investments in mineral development designed to achieve sound economic, environmental and social objectives. The two bullets below begin to illustrate some of what is needed to increase our competitiveness in the global market place:

- **Permitting Efficiency** – The process for obtaining permits and other authorizations to conduct exploration and development of domestic mineral resources must become more efficient by reducing unnecessary duplication and delay by focusing upon objective standards for controlling environmental effects. The National Academy of Sciences found that the permitting process for mining projects is cumbersome, complex and unpredictable. The lengthy delays often associated with permitting mines on federal lands discourage companies from exploring in the United States and impair the ability to attract investment required for mine development, which contributes to our increased reliance on foreign supplies of minerals.
- **Security of Tenure** – The ability to obtain title to the land encompassing the mining operations provides the industry with a measure of security and predictability needed to induce lenders and other investors to provide the enormous amounts of capital required to bring new mines into production on federal lands. The patenting process must be reinstituted with requirements to compensate the federal government for the surface. Other methods of obtaining secure title to lands, such as direct sales, must also be encouraged.

USGS FY2006 PROPOSED BUDGET CUTS

United States Geological Survey's role in mineral information, exploration, identification of geological hazards and mapping offers important support to the nation, helping to address and identify important economic and national security concerns. The USGS is the leading source of America's statistical data on mining and mineral commodities, as well as a respected research institution providing important international mineral resource data. WMC strongly recommends that the proposed \$29 million FY2006 budget reduction be restored to current funding levels, so the agency, the mining industry, and the American economy can meet the challenges of a rapidly competitive marketplace in need of critical mineral resources with unbiased and accurate information:

- U.S.G.S. research and information provide the basis for informed policy decisions.
- Federal and state agencies, Members of Congress and all levels of government, as well as industry, academia and NGOs extensively use this data.
- The USGS is the leading source of unbiased research on the nation's vital mineral resources. The guidance and research provided is important in maintaining the growing value of processed materials from mineral resources that accounted for \$418 billion in the U.S. economy in 2004, as well as assessing the environmental impacts of mining.
- U.S.G.S. international research programs are important to the nation in order to assess mineral resources globally, supply and demand trends, and mineral development activities helping the U.S. address supply issues and other concerns.

In the face of increased global competition for mineral resources, the nation needs the data and research that is completed by the USGS to properly track foreign reliance, exploration and development trends, and mineral potential throughout the world. Additionally, we need to be expanding mineral potential assessments in the U.S. in order to update and improve the knowledge-base for our national mineral potential. As China and India and other emerging nations increase their consumption of mineral resources, we will need to be looking closer to home to help to meet the needs of the U.S. in maintaining its standard of living.

Summary and Recommendations

We have China to thank for helping to motivate the U.S. out of complacency and into a more competitive role in mineral resource development. In the last six months, meetings that I have attended continue to illustrate and expound on the impacts China and its emerging economy is having on mineral resources globally, creating supply and demand issues the world over. I applaud China's foresight, and encourage us all to take note of what is happening and start to evolve our competitive juices to begin to meet these changing needs.

Our nation has the strength of large, diverse geologic environments with solid mineral potential for many types of mineral resources. We need to update our knowledge of our mineral potential through integrated mineral assessments, working closely with the State geologists

nationally while including on-going and expanding research from the U.S.G.S. We need to promote and complete regulatory updates and improvements to better address our nation's needs; and we need to implement a National Mineral Policy that integrates sound economic, environmental and social objectives with a healthier regulatory climate that is fair, predictable and efficient. These are some of the improvements that we can make that will have immediate positive impacts on our competitiveness in the global mineral development arena.

References

Mineral Information Institute (MII) www.mii.org

MII Periodic Table: <http://www.mii.org/periodic/MIIPeriodicChart.html>

National Mining Association (NMA) personal communications, 2005. Information from the website: www.nma.org

Northwest Mining Association, personal communication, Laura Skaer, 2005.

Noranda's website, news releases relative to the proposed merger of Noranda and Falconbridge: <http://www2.cdn-news.com/scripts/DNRP/scroll.asp?t=noranda>

Joy Mining Machinery website: http://www.joy.com/mineral_info/matrix.htm

United States Geological Survey, Mineral Commodity Summaries, 2004.

United States Geological Survey, Mineral Commodity Summaries, 2005.

APPENDIX A

Foreign import reliance – from the National Mining Association website:

http://www.nma.org/statistics/pub_statistics.asp

Facts About Minerals.

APPENDIX B

Minerals and their uses

Joy Mining and P &H Mining Equipment have similar websites, helping to provide important mineral resource information to the general public.

http://www.joy.com/mineral_info/matrix.htm - mineral matrix with some important uses identified.